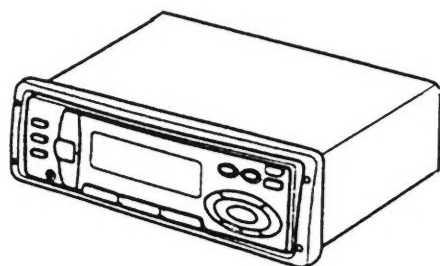


aiwa



STEREO CAR CASSETTE
RECEIVER

CT-FR728M
CT-FR928M
CT-FX728M
CT-FR718
CT-FX718

• BASIC TAPE MECHANISM: CDS522A

• TYPE : YZ (FR728M,928M,FR718,FX718,
FX728M) YVJ (FX718) YJ(FX728M)

改 定 版

REVISION PUBLISHING

このサービスマニュアルはシンプル版 (S/M Code No. 09-985-274-80I)
(S/M Code No. 09-985-279-00I) の改定版です。差し替えて使用してください。

This Service Manual is the "Revision Publishing" and replaces "Simple Manual"
(S/M Code No. 09-985-274-80I)(S/M Code No. 09-985-279-00I)..

SPECIFICATIONS

RADIO SECTION

(FM) <FR728M, FR928M, FR718>

Frequency Range:	87.5 MHz - 108 MHz (25-kHz/50-kHz steps)
Usable Sensitivity:	12.7 dBf
50 dB Quieting Sensitivity:	17.2 dBf
IF Rejection:	80 dB
Frequency response:	30 Hz - 15,000 Hz
S/N Ratio:	63 dB
Stereo Separation:	35 dB at 1 kHz
Alternate Channel Sensitivity:	70 dB
Capture Ratio:	3 dB

(FM) <FX718, FX728M>

Frequency Range:	<YZ> 87.5 MHz - 108 MHz (25-kHz/50-kHz steps)
	<YVJ> 87.5 MHz - 108 MHz (100-kHz steps)
	<YJ> 87.5 MHz - 108 MHz (50-kHz steps)
	65 MHz - 74 MHz (10-kHz/50-kHz steps)
Usable Sensitivity:	12.7 dBf
50 dB Quieting Sensitivity:	17.2 dBf
IF Rejection:	80 dB
Frequency Response:	30 Hz - 15,000 Hz
S/N Ratio:	63 dB
Stereo Separation:	35 dB at 1 kHz
Alternate Channel Sensitivity:	70 dB
Capture Ratio:	3 dB

(MW)

Frequency Range:	531 kHz - 1,602 kHz (9-kHz steps)
Usable Sensitivity:	30 µV (30dB)

(LW)

Frequency Range:	144 kHz - 288 kHz (1-kHz/9-kHz steps)
Usable Sensitivity:	30 µV (30dB)

TAPE SECTION

Wow/Flutter:	0.1% (WRMS)
Tape Speed:	4.8 cm/sec. (1 ⁷ / ₈ ips)
S/N Ratio (normal):	50 dB
S/N Ratio (metal) <FR928M, FX728M>:	Dolby NR off 54 dB Dolby NR on 64 dB
Frequency Response:	40 Hz - 14,000 Hz (normal) 40 Hz - 16,000 Hz (metal) <FR928M, FX728M>
Stereo Separation:	40 dB
FF/REW Time:	95 sec. (C-60)

AUDIO SECTION


Max. Power Output:	40 W × 4 channels
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CD IN input

Input sensitivity (load impedance)	
CD IN:	500 mV (10 kΩ)

GENERAL

Power-supply Voltage:	14.4V (11 to 16 V allowable), DC, negative ground
Load impedance:	4 Ω
Tone control:	Bass ±10 dB at 100 Hz Treble ±10 dB at 10 kHz
Preamplifier Output Voltage (load impedance):	2.2 V (10 kΩ)
Installation size:	182 (W) × 53 (H) × 155 (D) mm (7 ¹ / ₄ (W) × 2 ¹ / ₈ (H) × 6 ¹ / ₈ (D) inches)

- Design and specifications are subject to change without notice.
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
- "DOLBY", and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

ACCESSORIES LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-KT1-910-200		INSTRUCTION BOOK (INST, YZ-EGFSI <R92, R72, R71>	2	S8-KT4-910-400		INSTRUCTION BOOK (YV, ER) <X71YV>
1	S8-KT4-910-200		INSTRUCTION BOOK (INST, YZ) <X71YZ, X72YZ>	2	S8-KT4-910-600		INSTRUCTION BOOK (Y, ESCA) <X72YJ>
1	S8-KT4-910-500		INSTRUCTION BOOK (INST, YV, ER) <X71YV>	3	S8-KT1-910-300		INSTRUCTION BOOK (YZ, CZ-PO-H) <R92, R72, R71>
1	S8-KT4-910-700		INSTRUCTION BOOK (INST, Y, ESCA) <X72YJ>	3	S8-KT4-910-100		INSTRUCTION BOOK (YZ) <X71YZ, X72YZ>
2	S8-KT1-910-100		INSTRUCTION BOOK (YZ, EGFSID) <R92, R72, R71>	4	S6-KY1-910-100		INSTRUCTION BOOK (Y-EGFSICA) <R92>
2	S8-KT4-910-300		INSTRUCTION BOOK (INST, YZ) <X71YZ, X72YZ>	5	S0-081-202-000		CORD, REMOTE LINE 2000MM (BLK) <R92>
				6	S7-KTE-480-000		MOUNTING BKT
				7	S0-000-500-000		NUT, 5M<EXCEPT R72, R71>
				8	S2-050-654-091		NUT, 5M<R72, R71>
				9	S1-205-001-520		SCREW, ST5-15

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC	S9-265-790-000	IC, SAA6579T<R92, R72, R71>	
	S3-350-994-D84	IC, PST994D-2	
	88-KT1-604-010	IC, TA7291P	
	87-A20-233-010	IC, HA12192F<R92, X72YZ, X72YJ>	
	SI-CKI-A62-250	IC, KIA6225S	
		KES<R72, R71, X71YZ, X71YV>	
	S7-175-370-000	IC, LC75373E	
	S3-613-150-1A0	IC, HA13158	
	87-A20-888-010	IC, UPD17709GC-517-3B9	
	S4-000-090-000	IC, BA09T	
	S7-175-850-000	IC, LC75854W	
TRANSISTOR	89-324-122-080	C-TR, 2SC2412KR	
	89-110-372-080	C-TR, 2SA1037AK	
	ST-RC3-63T-KL0	C-TR, DTC363TK	
	S3-1KT-A16-58Y	TR, KTA1658Y	
	S3-147-320-325	TR, KTC 3203Y	
	S3-1KT-C43-69Y	TR, KTC4369Y	
	87-026-210-010	TR, DTC144EK	
	87-026-239-080	TR, DTC114TK	
	SD-TB1-23Y-K00	C-TR, DTB123YKA	
	87-026-233-080	C-TR, DTA114TKA	
DIODE	87-020-465-010	DIODE, 1SS133	
	87-070-333-080	ZENER, 5.1V	
	87-070-334-080	ZENER, 10V	
	S9-7U0-6R2-1B0	ZENER, 6.2V	
	87-A40-003-080	ZENER, 4.3V	
	87-001-783-080	DIODE, IN-4002	
	S3-9Z1-7V0-000	ZENER, 9.1V	
	S0-100-680-010	ZENER, 6.8V MTZJ6.8B	
MAIN C.B	C103	87-010-264-040	CAP, E 100-10V
	C107	87-010-401-010	CAP, E 1-50V<EXCEPT X72YJ>
	C107	87-015-696-080	CAP, E 2.2-50<X72YJ>
	C108	87-010-234-070	CAP, E 47-16V
	C109	87-010-264-040	CAP, E 100-10V
	C113	87-010-401-010	CAP, E 1-50V
	C114	87-010-401-010	CAP, E 1-50V
	C115	87-010-479-080	CAP, E 0.1-50V
	C116	87-010-234-070	CAP, E 47-16V
	C151	87-010-264-040	CAP, E 100-10V<R92, R72, R71>
	C155	87-015-696-080	CAP, E 2.2-50V<R92, R72, R71>
	C201	87-010-101-040	CAP, E 220-16V
	C202	87-010-244-040	CAP, E 22-16V
	C203	87-010-264-040	CAP, E 100-10V
	C205	87-010-782-010	CAP, E 47000-5.5V
	C209	87-010-234-070	CAP, E 47-16V
	C210	87-010-221-010	CAP, E 470-10V
	C252	87-010-379-040	CAP, E 22-16V
	C254	87-010-234-070	CAP, E 47-16V
	C255	87-010-497-080	CAP, E 4.7-35V
	C305	87-010-070-040	CAP, E 0.47-50V<R92, X72YZ, X72YJ>
	C305	87-010-401-010	CAP, E 1-50V<R72, R71, X71YZ, X71YV>
	C306	87-010-401-010	CAP, E 1-50V<R72, R71, X71YZ, X71YV>
	C306	87-010-070-040	CAP, E 0.47-50V<R92, X72YZ, X72YJ>
	C310	87-010-401-010	CAP, E 1-50V<R92, X72YZ, X72YJ>
	C312	87-010-069-080	CAP, E 0.33-50V<R92, X72YZ, X72YJ>
	C313	87-010-264-040	CAP, E 100-10V<R92, X72YZ, X72YJ>
	C314	87-010-401-010	CAP, E 1-50V<R92, X72YZ, X72YJ>
	C353	87-010-075-040	CAP, E 10-16V<R72, R71, X71YZ, X71YV>
	C354	87-010-075-040	CAP, E 10-16V<R72, R71, X71YZ, X71YV>

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
C357	87-010-264-040	CAP, E 100-10V	
		<R72, R71, X71YZ, X71YV>	
C358	87-010-264-040	CAP, E 100-10V	
		<R72, R71, X71YZ, X71YV>	
C361	87-010-264-040	CAP, E 100-10V	
		<R72, R71, X71YZ, X71YV>	
C401	87-010-401-010	CAP, E 1-50V	
C402	87-010-401-010	CAP, E 1-50V	
C403	87-010-401-010	CAP, E 1-50V	
C404	87-010-401-010	CAP, E 1-50V	
C405	87-010-401-010	CAP, E 1-50V	
C406	87-010-401-010	CAP, E 1-50V	
C407	87-010-401-010	CAP, E 1-50V	
C408	87-010-401-010	CAP, E 1-50V	
C409	87-010-401-010	CAP, E 1-50V	
C410	87-010-401-010	CAP, E 1-50V	
C411	87-010-075-040	CAP, E 10-16V	
C412	87-010-075-040	CAP, E 10-16V	
C417	87-010-075-040	CAP, E 10-16V	
C418	87-010-075-040	CAP, E 10-16V	
C419	87-010-677-040	CAP, E 0.15-50V	
C420	87-010-677-040	CAP, E 0.15-50V	
C421	87-010-677-040	CAP, E 0.15-50V	
C422	87-010-677-040	CAP, E 0.15-50V	
C423	87-010-075-040	CAP, E 10-16V	
C424	87-010-075-040	CAP, E 10-16V	
C425	87-010-075-040	CAP, E 10-16V	
C426	87-010-075-040	CAP, E 10-16V	
C427	87-010-075-040	CAP, E 10-16V	
C428	87-010-075-040	CAP, E 10-16V	
C429	87-010-264-040	CAP, E 100-10V	
C430	87-010-244-040	CAP, E 22-16V	
C505	87-010-401-010	CAP, E 1-50V<R92>	
C506	87-010-401-010	CAP, E 1-50V<R92>	
C507	87-010-401-010	CAP, E 1-50V	
C508	87-010-401-010	CAP, E 1-50V	
C551	87-010-234-070	CAP, E 47-16V	
C601	87-010-401-010	CAP, E 1-50V	
C602	87-010-401-010	CAP, E 1-50V	
C603	87-010-401-010	CAP, E 1-50V	
C604	87-010-401-010	CAP, E 1-50V	
C610	87-010-377-010	CAP, E 3300-16V	
C611	87-010-866-010	CAP, E 10-63V	
C612	87-010-497-080	CAP, E 4.7-35V	
C712	87-010-497-080	CAP, E 4.7-35V	
C801	87-010-401-010	CAP, E 1-50V	
D801	S0-012-400-030	LED, LAMP 3MM(RED)	
J101	S1-180-400-010	JACK, ANT	
J501	S0-209-000-000	JACK, PIN 2P<EXCEPT R92>	
J501	S0-209-100-000	JACK, RCA 4P<R92>	
J551	S0-051-160-000	SOCKET, DIN<R92, R72, X72YZ, X72YJ>	
J701	S0-016-370-000	JACK, HSJ1637(REMOTE CONT)	
L101	SL-C4R-7J0-9C0	INDUCTOR 4.7UH	
L151	87-005-688-080	INDUCTOR 22UH<R92, R72, R71>	
L201	87-003-149-080	INDUCTION, 47UH	
SFR101	S1-040-650-000	SFR, 100K<R92, R72, R71>	
SFR301	S1-030-850-010	SFR, 10K<R92, X72YZ, X72YJ>	
SFR302	S1-030-850-010	SFR, 10K<R92, X72YZ, X72YJ>	
SW702	SK-HH9-130-010	SW, TACT SKHHLQ	
		<R92, R72, X72YZ, X72YJ>	
SW751	S1-220-211-000	SW, SLIDE<EXCEPT R92, R72, R71>	
TUN101	S2-003-400-010	JACK, TUNER<X71YV>	
TUN101	S2-003-400-020	TUNER PACK AM/FM<EXCEPT X71YV>	
X151	S6-043-320-000	X'TAL, 4.332 MHZ<R92, R72, R71>	
X701	S6-045-001-000	X'TAL, 4.500MHZ	
FRONT C.B			
C901	87-010-244-040	CAP, E 22-16V	
LCD901	S0-08K-T10-000	LCD, COLOR DISPLAY	
PL901	S1-090-500-050	BULB 9V	

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
PL901	S0-688-660-050	COVER, LAMP	
PL902	S1-090-500-050	BULB 9V<R92>	
PL902	S0-688-660-020	COVER, LAMP 3.0-7.0<R92>	
PL903	S1-090-500-050	BULB 9V	
PL903	S0-688-660-050	COVER, LAMP	
PL904	S1-090-500-050	BULB 9V<R92>	
PL904	S0-688-660-020	COVER, LAMP 3.0-7.0<R92>	
PL905	S1-090-500-050	BULB 9V	
PL905	S0-688-660-050	COVER, LAMP	
PL906	S1-090-500-050	BULB 9V<R92>	
PL906	S0-688-660-020	COVER, LAMP 3.0-7.0<R92>	
PL907	S1-090-500-050	BULB 9V	
PL907	S0-688-660-050	COVER, LAMP	
PL908	S1-090-500-050	BULB 9V<R92>	
PL908	S0-688-660-020	COVER, LAMP 3.0-7.0<R92>	
PL909	S1-090-500-050	BULB 9V	
PL909	S0-688-660-050	COVER, LAMP	
PL910	S1-090-500-050	BULB 9V<R92>	
PL910	S0-688-660-020	COVER, LAMP 3.0-7.0<R92>	
PL911	S1-090-500-050	BULB 9V	
PL911	S0-688-660-050	COVER, LAMP	
PL912	S1-090-500-050	BULB 9V<R92>	
PL912	S0-688-660-020	COVER, LAMP 3.0-7.0<R92>	
PL913	S1-090-500-050	BULB 9V	
PL913	S0-688-660-060	COVER LAMP	
PL914	S1-090-500-050	BULB 9V	
PL914	S0-688-660-060	COVER LAMP	
PL915	S1-090-500-050	BULB 9V	
PL915	S0-688-660-060	COVER LAMP	
SW901	SD-LT1-100-010	SW, TACT 2P 5MM	
SW902	SD-LT1-100-010	SW, TACT 2P 5MM	
SW903	SD-LT1-100-010	SW, TACT 2P 5MM	
SW904	SD-LT1-100-010	SW, TACT 2P 5MM	
SW905	SD-LT1-100-010	SW, TACT 2P 5MM	
SW906	SD-LT1-100-010	SW, TACT 2P 5MM	
SW907	SD-LT1-100-010	SW, TACT 2P 5MM	
SW908	SD-LT1-100-010	SW, TACT 2P 5MM	
SW909	SD-LT1-100-010	SW, TACT 2P 5MM	
SW910	SD-LT1-100-010	SW, TACT 2P 5MM<R92, R72, R71>	
SW911	SD-LT1-100-010	SW, TACT 2P 5MM	

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
SW912	SD-LT1-100-010	SW, TACT 2P 5MM	
SW913	SD-LT1-100-010	SW, TACT 2P 5MM	
SW914	SD-LT1-100-010	SW, TACT 2P 5MM	
SW915	SD-LT1-100-010	SW, TACT 2P 5MM	
SW916	SD-LT1-100-010	SW, TACT 2P 5MM	
SW917	SD-LT1-100-010	SW, TACT 2P 5MM	
SW918	SD-LT1-100-010	SW, TACT 2P 5MM	
SW919	SD-LT1-100-010	SW, TACT 2P 5MM	
SW920	SD-LT1-100-010	SW, TACT 2P 5MM	
SW921	SD-LT1-100-010	SW, TACT 2P 5MM	
SW922	S2-210-211-000	SW, SLIDE 2P2T<R92>	

JACK C.B			
J901	S0-000-320-000	JACK, AUX 3.5MM	

SUB C.B			
PL201	S1-090-500-050	BULB 9V	
SW701	SD-LT1-100-000	SW, TACT 2P 5MM	

RELAY C.B			
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HEAD C.B			
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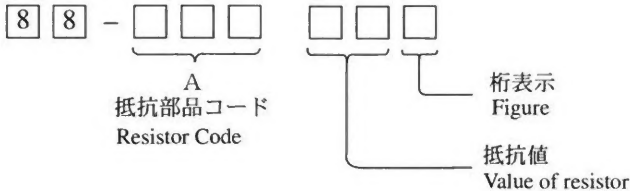
REEL C.B			
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NOTE:

Introductory Remarks	Model Name
<R92>	CT-FR928M(YZ)
<R72>	CT-FR728M(YZ)
<R71>	CT-FR718(YZ)
<X71YZ>	CT-FX718(YZ)
<X71YV>	CT-FX718(YVJ)
<X72YZ>	CT-FX728M(YZ)
<X72YJ>	CT-FX728M(YJ)

○ チップ抵抗部品コード / CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法 / Dimensions (mm)				抵抗コード : A Resistor Code : A
				外形 / Form	L	W	t	
1/16W	1608	5%	CJ		1.6	0.8	0.45	108
1/10W	2125	5%	CJ		2	1.25	0.45	118
1/8W	3216	5%	CJ		3.2	1.6	0.55	128

A MAIN C.B.

F HEAD C.B.

G REEL C.B.

D SUB C.B. (1/2)

D SUB C.B. (2/2)

E RELAY C.B.

J551 TO COMPACT DISC CHANGER (OPTIONAL)

IC101 FA540-E03

IC102 74VHC123

IC103 74VHC123

IC104 74VHC123

IC105 74VHC123

IC106 74VHC123

IC107 74VHC123

IC108 74VHC123

IC109 74VHC123

IC110 74VHC123

IC111 74VHC123

IC112 74VHC123

IC113 74VHC123

IC114 74VHC123

IC115 74VHC123

IC116 74VHC123

IC117 74VHC123

IC118 74VHC123

IC119 74VHC123

IC120 74VHC123

IC121 74VHC123

IC122 74VHC123

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IC210 74VHC123

IC211 74VHC123

IC212 74VHC123

IC213 74VHC123

IC214 74VHC123

IC215 74VHC123

IC216 74VHC123

IC217 74VHC123

IC218 74VHC123

IC219 74VHC123

IC220 74VHC123

IC221 74VHC123

IC222 74VHC123

IC223 74VHC123

IC224 74VHC123

IC225 74VHC123

IC226 74VHC123

IC227 74VHC123

IC228 74VHC123

IC229 74VHC123

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IC251 74VHC123

IC252 74VHC123

IC253 74VHC123

IC254 74VHC123

IC255 74VHC123

IC256 74VHC123

IC257 74VHC123

IC258 74VHC123

IC259 74VHC123

IC260 74VHC123

IC261 74VHC123

IC262 74VHC123

IC263 74VHC123

IC264 74VHC123

IC265 74VHC123

IC266 74VHC123

IC267 74VHC123

IC268 74VHC123

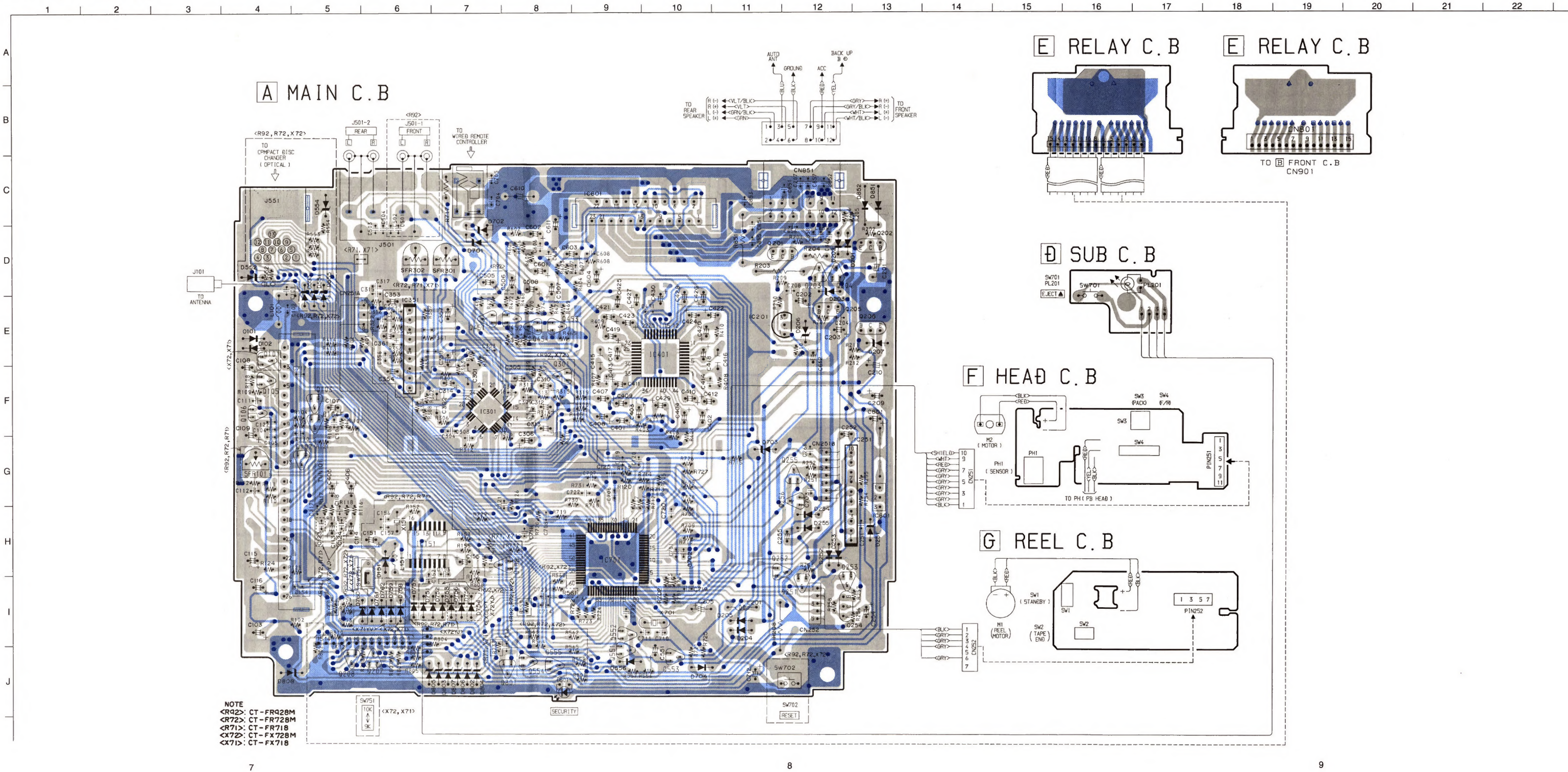
IC269 74VHC123

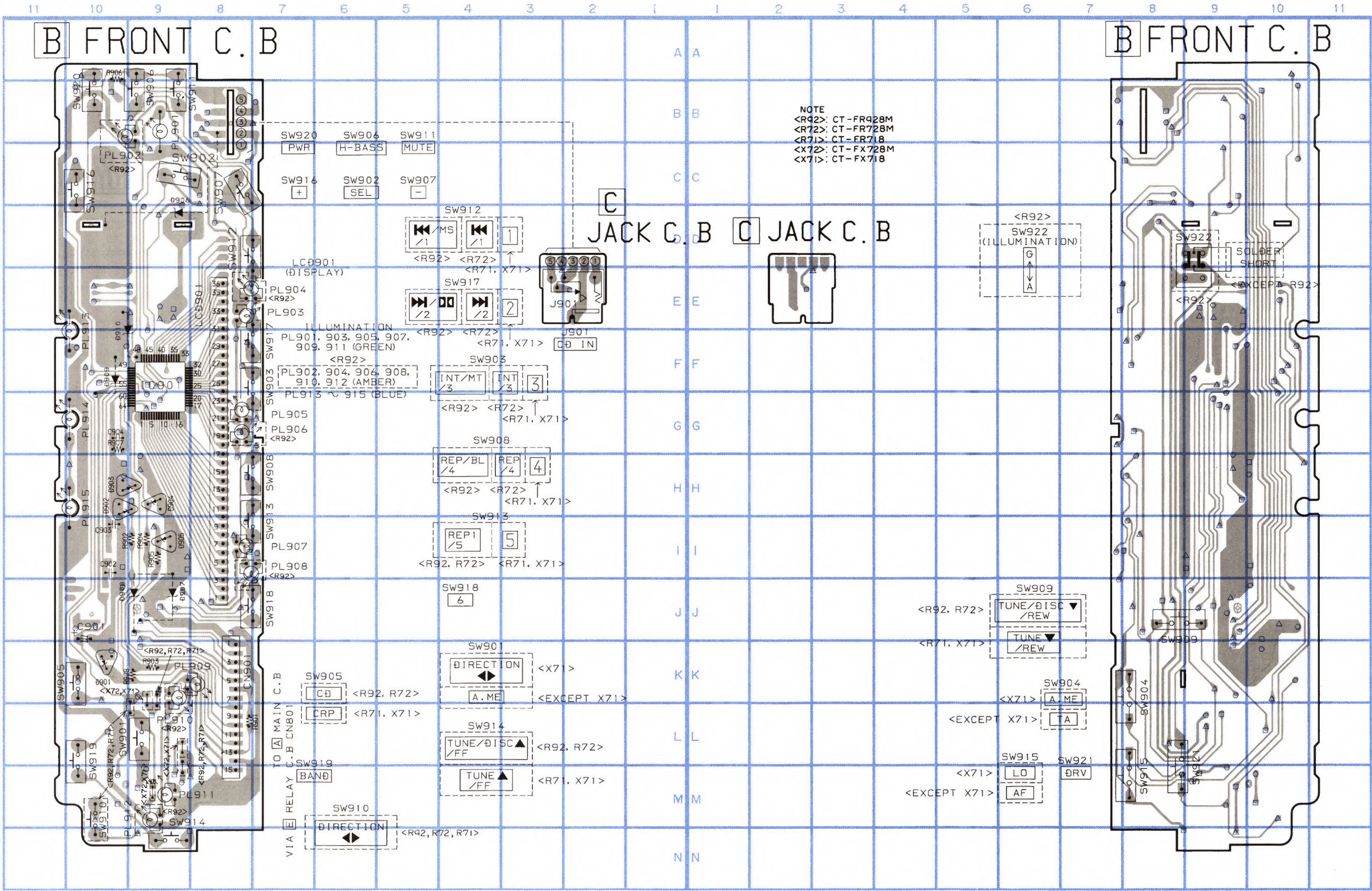
IC270 74VHC123

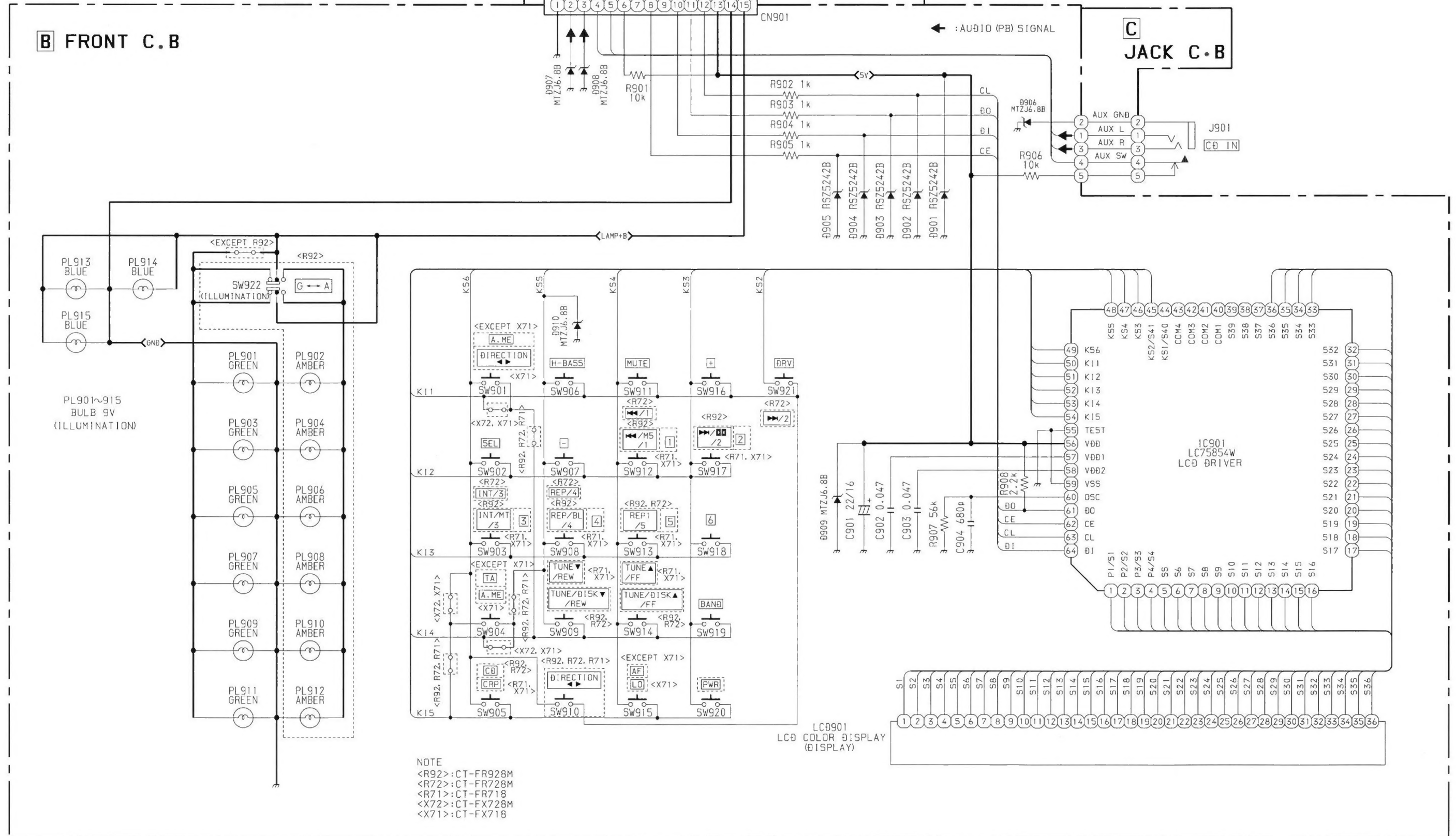
IC271 74VHC123

IC272 74VHC12

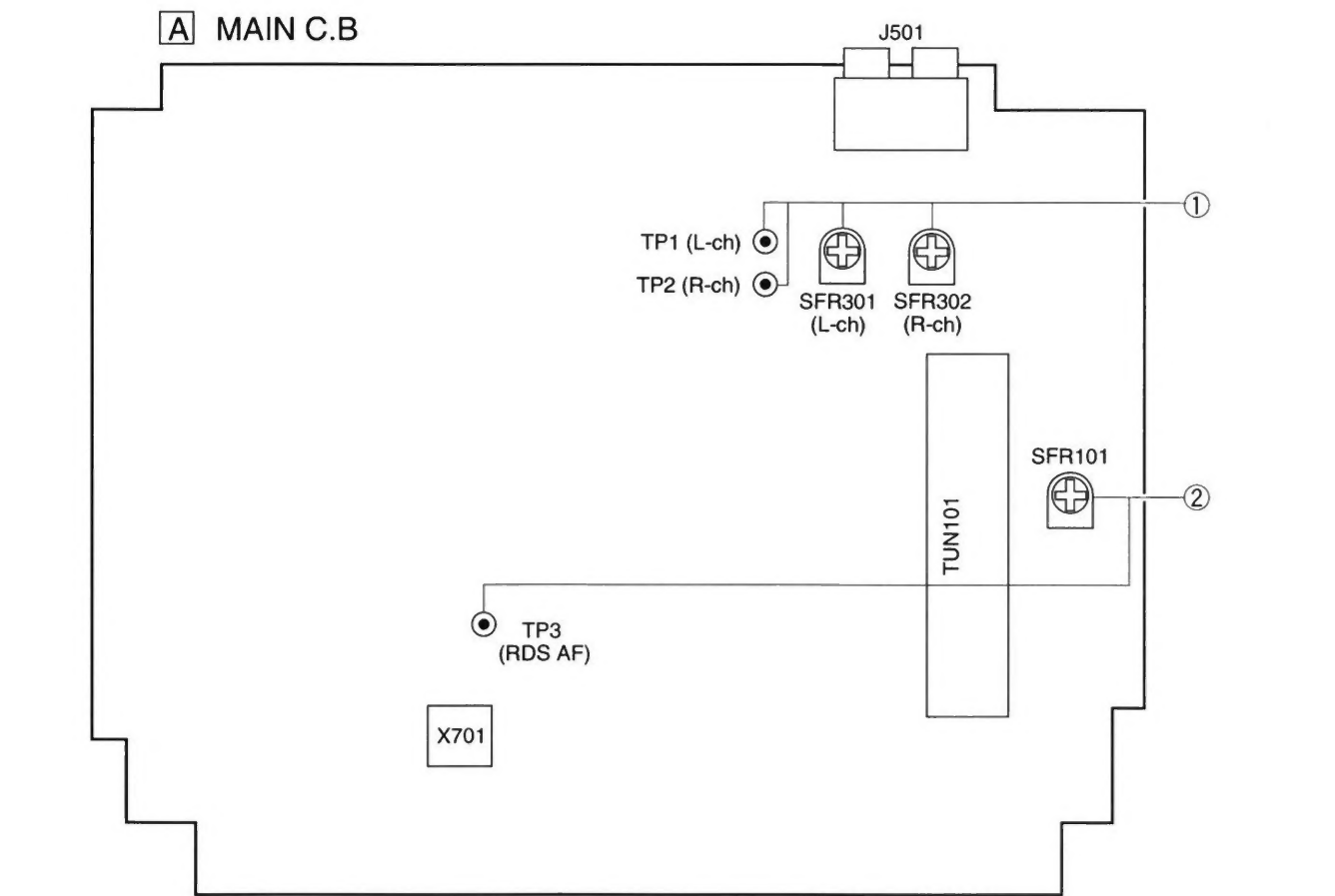
WIRING-1 (MAIN SECTION)







ELECTRICAL ADJUSTMENT



1. Dolby NR Adjustment

- Settings:
- Test tape: TTA-200
 - Test point: TP1 (Lch)
TP2 (Rch)
 - Adjustment location: SFR301 (Lch)
SFR302 (Rch)

Method:

- ① Play a Dolby NR tape and adjust SFR301 and SFR302 so the Lch (TP1) and Rch (TP2) levels are $300\text{ mV} \pm 1.0\text{ dB}$.
- ② Adjust the level in the forward running direction, and then check in the reverse direction. If the level drifts from the specification, perform readjustment.

2. AF start level Adjustment (FR728, FR928, FR718 only)

- Settings:
- Test point: TP3 (RDS AF)
 - Adjustment location: SFR101
- Method:
- ① The reception frequency are adjusted to 98 MHz (45 kHz DEV, 1 kHz MOD)
 - ② ANT input signal strength is set in 32 dBμV. SFR101 is adjusted so that the barminal AF IN may became $1.70\text{ V} \pm 0.05\text{V}$.
 - ③ It is confirmed that the AF start level is $32 \pm 4\text{dB}\mu\text{V}$ or less.

※ Method of confirming AF start level
The AF display of the LCD display machine is lit and SEEK is done. The RDS signal which the AF list enters is received. The level by which SEEK STOP is started is measured.

※ Method of confirming AF operation

- ① AF and the TP display are lit pushing key.
- ② 98 MHz is received.
- ③ If PS is displayed, preset station button is pushed for two seconds or more.
- ④ SSG is adjusted to 97 MHz.
- ⑤ And, preset station button <0.5 sec or less> pushes
- ⑥ It is Confirmed to receive 97 MHz

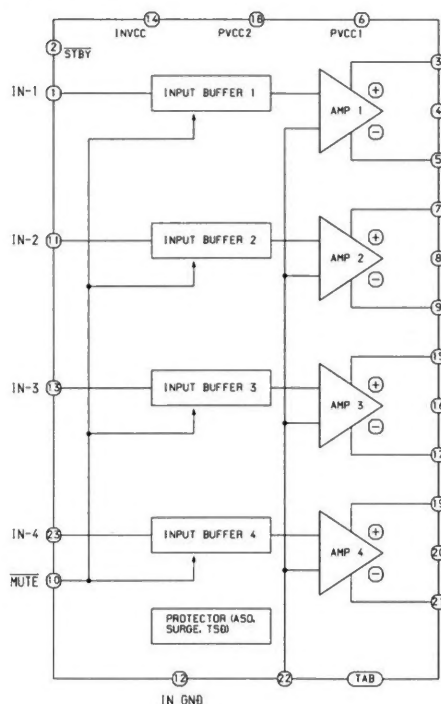
IC DESCRIPTION-1
IC, LC75373E

Pin No.	Pin Name	I/O	Description
1	RVRIN	I	4dB VR input. Must be driven with low impedance.
2	RCOM	—	1dB VR common pin
3~5	RT1~RT3	—	For the connection of capacitors that compensate for bass and treble in the tone control circuits. A high-frequency compensation capacitor must be connected between T1 and T2. A low-frequency compensation capacitor must be connected between T2 and T3.
6	RT OUT	O	Tone control output
7	RS IN	I	Super bass input. Must be driven with low impedance.
8~10	RS1~RS3	—	For the connection of super bass compensation capacitors
11	RS OUT	O	Super bass output
12	FR IN	I	Fader input. Must be driven with low impedance.
13	FR	O	Fader outputs. The front and rear sides can be faded independently.
14	RR	O	
15	VSS	—	Ground
16	CL	I	Serial data and clock inputs for control
17	DI	I	
18	CE	—	Chip enable. Data is written to the internal latch when the chip enable signal goes "L" from "H", and each analog switch is activated. Data transfer is enabled at "H".
19	Vref	—	Generates a 1/2VDD power source. A capacitor must be connected between Vref and VSS as a troubleshooting against power ripples.
20	RL	O	Fader outputs. The front and rear sides can be faded independently.
21	FL	O	
22	FLIN	I	Fader input. Must be driven with low impedance.
23	LSOUT	O	Super bass output
24~26	LS3~LS1	—	For the connection of super bass compensation capacitors
27	LS IN	I	Super bass input. Must be driven with low impedance.
28	LT OUT	O	Tone control output
29~31	LT3~LT1	—	For the connection of capacitors that comensate for bass and treble in the tone control circuit. A high-frequency compensation capacitor must be connected between T1 and T2. A low-frequency compensation capacitor must be connected between T2 and T3.
32	LCOM	—	1dB VR common pin
33	LVRIN	I	4dB VR input. Must be driven with low impedance.
34	LSELO	O	Input selector output
35	L1	I	Signal inputs
36	AUX/L	I	
37	TP/L	I	
38	TU/L	I	
39	VDD	—	Power supply
40	TU/R	I	Signal inputs
41	TP/R	I	
42	AUX/R	I	

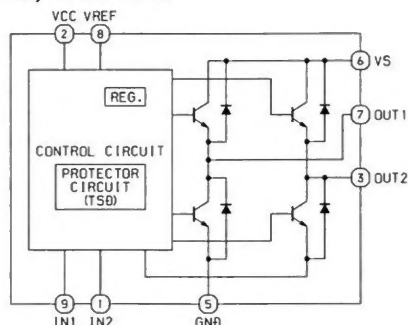
Pin No.	Pin Name	I/O	Description
43	R4	I	Signal input Input selector outputs
44	RSELO	O	

IC BLOCK DIAGRAMS

IC, HA13158



IC, TA7291P

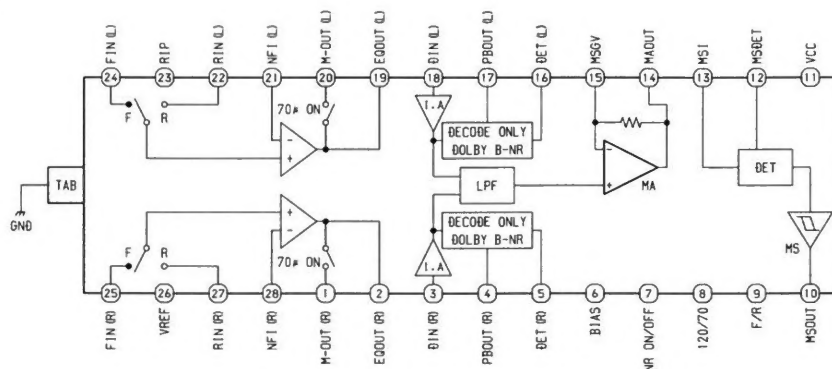


TRUTH TABLE

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW/CCW
0	1	L	H	CCW/CW
1	1	L	L	BRAKE

∞ : HIGH IMPEDANCE
INPUT IS "H" ACTIVE

IC, HA12192F



TRANSISTOR ILLUSTRATION



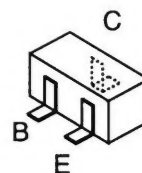
ECB
KTC3203



ECB
DTA114TKA
DTB123YKA
DTC114TK
DTC144EK
DTC363TK



BCE
KTA1658
KTC4369



C
B
E
2SA1037
2SC2412

IC DESCRIPTION-2

IC, μ PD17709GC-517-3B9

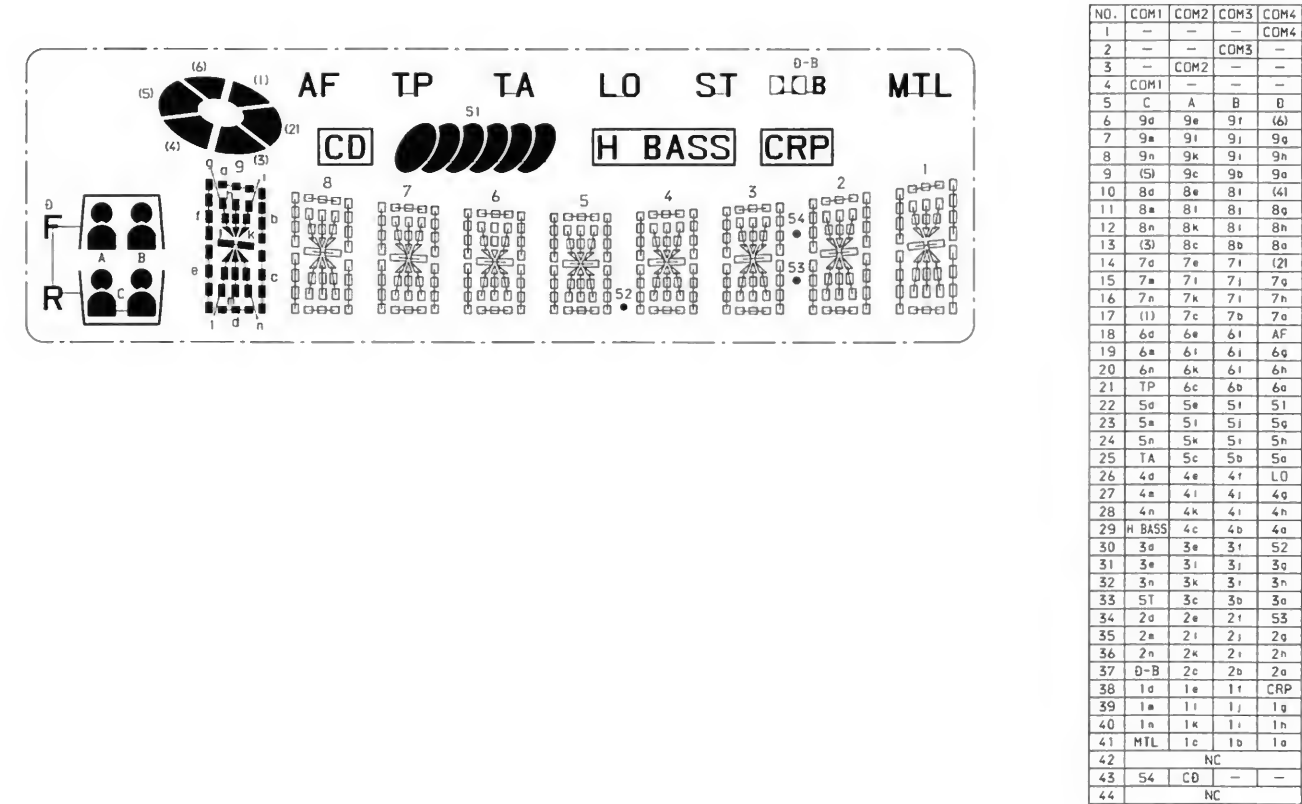
Pin No.	Pin Name	I/O	Description
1	ST-BY	I	Tape mechanism standby input
2	MS IN	I	MS signal input (H: Track absent, L: Track present)
3	NC	—	No connection
4	TAPE END	I	Tape end detection input
5	F/R SW	I	FWD/REV mechanism position detection input
6	MAIN M CON	O	Main motor control output
7	SUB M CON1	O	Sub-motor 1 control output
8	SUB M CON2	O	Sub-motor 2 control output
9	AUX/MIC	O	AUX/MIC switching signal output
10	H. BASS 1	O	H.BASS control output 1 (only display is changed)
11	H. BASS 2	O	H.BASS control output 2 (only display is changed)
12	BS CONT	O	MS/BS switching output
13	NR B CONT	O	Dolby NR ON/OFF output
14	SIFT	I	Rotary commander shift switch input
15	PACK-IN	I	Tape inserted status detection input
16	MODE PL	I	Tape mechanism mode pulse input
17	POWER CONT	O	Unit power control output
18	MTL CONT	O	Metal tape ON/OFF output
19	POWER MUTE	O	Muting output to power amp
20	STAND BY M	O	Standby muting output to power amp
21	GND 3	O	Device ground
22	KEY 3	—	(LC75854 key matrix is used simultaneously) For key matrix (2)
23	KEY 2	I	(LC75854 key matrix is used simultaneously) For key matrix (1)
24	KEY 1	I	Rotary commander input
25	AF IN	I	AF level input during AF operation
26	FM S-M	I	FM S-meter signal input
27	AM S-M	I	AM S-meter signal input
28	AM IF	I	AM IF count signal input
29	FM IF	I	FM IF count signal input
30	VDD	—	Device power supply
31	FM LOC OSC	I	FM local oscillation input
32	AM LOC OSC	I	AM local oscillation input
33	GND	—	Device ground
34	EO 2	O	Charge pump output for low-pass filter
35	EO 1	O	Charge pump output for low-pass filter
36	TEST	—	Device test input (need to be pulled down)
37	IF REQ CON	O	IF count signal request output
38	LOC/DX OUT	O	LOC/DX switching output during radio tuning
39	BEEP OUT	O	Beep sound output (200Hz, 3kHz, 50ms)
40	ST IND MO/ST OUT	I/O	The input is accepted only when the display input is received (MONO=H, ST=L). In other modes, the ST indication is switched off. Forced monaural output when the MONO key is pressed.

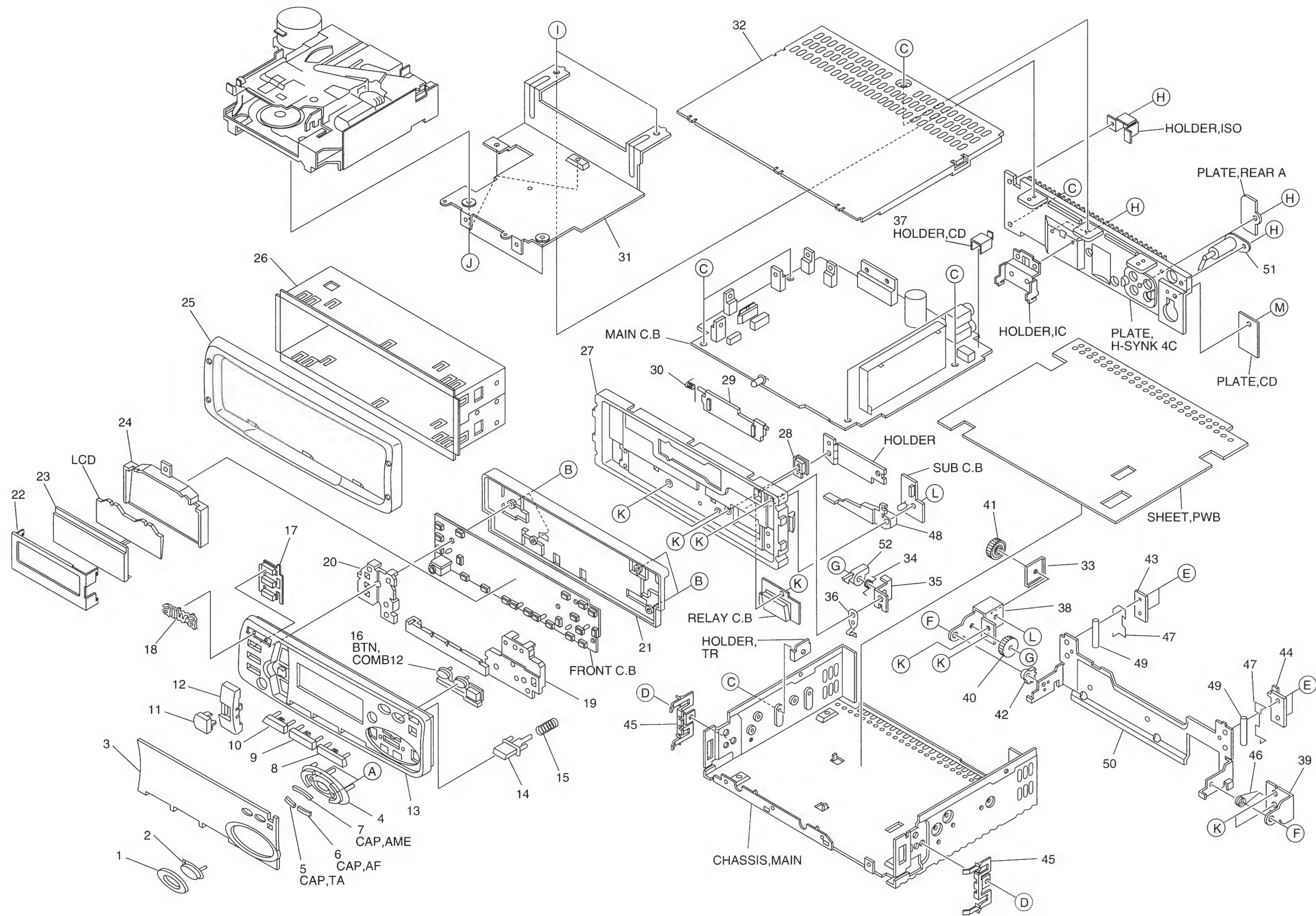
Pin No.	Pin Name	I/O	Description
41	FM SD	I	Stop pulse input during FM seeking
42	GC CONT	I	RDS clock input
43	AGC CONT	O	Outputs "H" during radio tuning
44	BAND CONT	O	AM/FM power switching output
45	RDS M OUT	O	Outputs "H" in the RDS mode.
46	RDS DATAIN	I	RDS data input
47	DFP SW IN	I	Detects whether front panel is present or absent.
48 ~ 50	K1 ~ K3	I	Diode matrix input for initial setting
51 ~ 54	K4 ~ K7	O	Diode matrix output for initial setting
55	AUX IN	I	AUX jack switch presence/absence detection input
56	AUX/MIC IN	I	AUX/MIC switch position detection input
57	CD MUTE	I	Muting signal input from CD changer
58	CE CONNECT	I	CD changer connection check
59	CE CLK OUT	O	Clock signal output to CD changer
60	LED CE OUT	O	Security LED flashing output (H = 120-130 ms, 1 cycle = 3 s)
61	EVR	O	Chip enable output to LC75854
62	EVR CE	O	Chip enable output to electronic VR (LC7573E)
63	EVR DATA	O	Date output to electronic VR (LC7573E)
64	EVR CLK	O	Clock output to electronic VR (LC7573E)
65	CLK OUT	O	Clock output to LC75854
66	DATA OUT	O	Data output to LC75854
67	DATA IN	I	Data input from LC75854
68	CD CLK IN	I	Clock input from CD changer
69	CD DATA OUT	O	Data output to CD changer
70	CD DATA IN	I	Data input from CD changer
71	CD DISP SEL	O	Determines the timing with which data is transmitted to the head unit.
72	CD ACC CONT	O	Transfers the information on head unit power on/off to the changer.
73	MUTE	O	Audio muting output
74	V REG	—	CPU regulator output
75	GND	—	Device ground
76	X OUT	O	Crystal oscillator output
77	X IN	I	Crystal oscillator input
78	CE	I	Chip enable input [ACC IN (car accessory power) on/off input]
79	VDD	—	Device power supply
80	RESET	O	Reset input

IC, LC75854W

Pin No.	Pin Name	I/O	Description
1~32	S1~S32	O	Display segments
33~39	S33~S39	—	Unused
40	COM1	O	Common 1 for display
41	COM2	O	Common 2 for display
42	COM3	O	Common 3 for display
43	COM4	O	Common 4 for display
44	KS1	—	Unused
45~49	KS2~KS6	O	Key scan outputs
50~54	KI1~KI5	I	Key scan inputs
55	TEST	—	GND
56	VDD	—	9V
57, 58	VDD1, VDD2	—	VDD
59	VSS	—	GND
60	OSC	I	Oscillator
61	DO	O	Communication; data output
62	CE	I	Communication; chip enable
63	CL	I/O	Communication; sync clock
64	DI	I	Communication; transferred data

LCD DISPLAY





MECHANICAL MAIN PARTS LIST

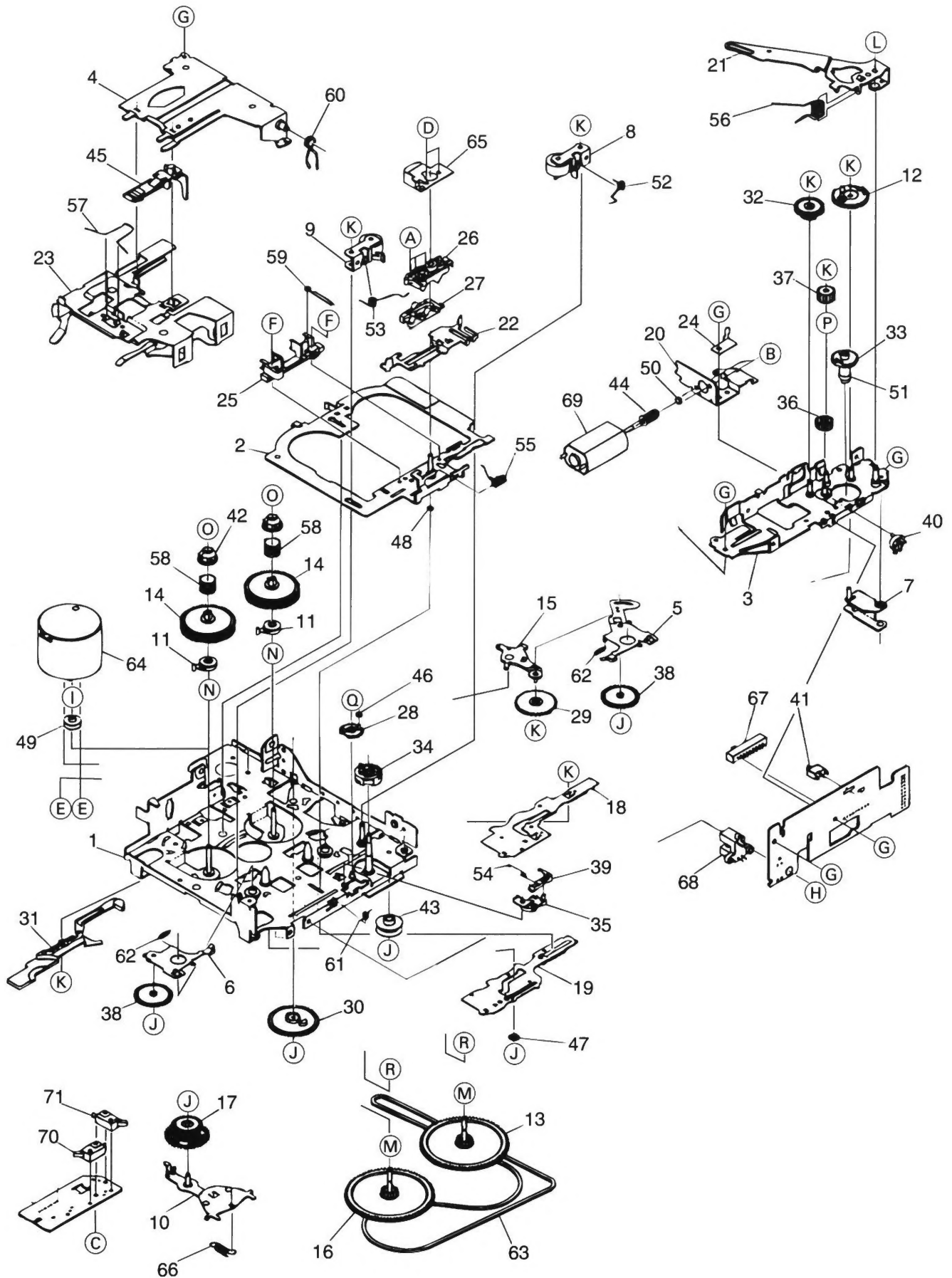
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S8-KTA-100-400		RING, R-T/D-F<R71, X71YZ, X71YV>	G	S0-48K-T10-010		SPECIAL SCREW M2-4.2-2.0
1	S8-KTA-100-300		RING, R-T/D-F<R92, R72, X72YZ, X72YJ>	H	87-741-096-410		SCREW, 3-10
2	S8-KTA-110-100		BTN, OVAL DRV	I	87-751-094-410		SCREW, TAPPING 3-6 B/T/B
3	S8-KT1-030-200		WINDOW, LCD<R71>	J	S2-8X5-KT3-020		SPECIAL SCREW FH M2.6-4
3	S8-KT3-010-300		WINDOW, LCD<X72YZ, X72YJ>	K	S0-48K-T10-030		SCREW, SPECIAL(SWCH)
				L	S0-48K-T10-040		SCREW, SPECIAL M5-10
3	S8-KT3-010-500		WINDOW, LCD<X71YZ, X71YV>	M	S0-051-160-000		SOCKET, DIN
3	S8-KT1-030-300		WINDOW, LCD<R72>				
3	S8-KT1-030-100		WINDOW, LCD(1)<R92>				
4	S8-KTA-120-100		BTN, U/D				
5	S8-KTA-130-200		CAP, DIRECTION<EXCEPT R92, R72, R71>				
6	S8-KTA-150-200		CAP, LOONT<EXCEPT R92, R72, R71>				
7	S8-KTA-140-300		CAP, AME SMALL<EXCEPT R92, R72, R71>				
8	S8-KTA-090-100		BTN, PRESET 5/6				
9	S8-KTA-080-100		BTN, PRESET 3/4<X71YZ, X71YV>				
9	S8-KTA-080-200		BTN, PRESET 3/4<EXCEPT X71YZ, X71YV>				
10	S8-KTA-070-100		BTN, PRESET 1/2<R72, R71, X71YZ, X71YV>				
10	S8-KTA-070-200		BTN, PRESET 1/2<R92, X72YZ, X72YJ>				
11	S8-KTA-060-100		BTN, SEL				
12	S8-KTA-050-100		BTN, +/-				
13	S8-KT1-010-200		CAB, FRONT<R71, X71YZ, X71YV>				
13	S8-KT1-010-100		CAB, FRONT<R92, R72, X72YZ, X72YJ>				
14	S8-KT1-070-100		BTN, OPEN				
15	S7-KTE-520-000		SPR, DETACH 3.65-9.5				
16	S8-KT1-060-100		BTN, COMBI<R92, R72>				
16	S8-KT1-060-200		BTN, COMBI<R71>				
16	S8-KT1-060-400		BTN, COMBI<X71YZ, X71YV>				
17	S8-KTA-040-100		BTN, P/B/MUTE				
18	S7-KTE-310-100		BADGE, AIWA				
19	S8-KT1-120-000		LENS, RIGHT				
20	S8-KT1-110-000		LENS, LEFT				
21	S8-KT1-020-000		CAB, REAR				
22	S8-KT1-150-000		CASE, LCD				
23	S8-KT1-710-000		LENS, LCD				
24	S8-KT1-140-000		HOLDER, LCD				
25	S8-KT1-090-010		CAB, TRIM				
26	S8-KT1-350-000		HOLDER, HALF				
27	S8-KT1-080-000		CAB, BASE				
28	S8-KT1-100-100		BTN, EJECT				
29	S8-KTA-230-100		DOOR, CASS				
30	S7-KTE-670-000		SPR, DOOR 0.25MM				
31	S8-KT1-330-000		HOLDER, DECK				
32	S8-KT1-360-000		COVER, TOP				
33	S8-KT1-230-000		HOLDER, GEAR				
34	S8-KT1-410-000		SPR, OPEN 0.4MM				
35	S8-KT1-310-000		BASE, OPEN 0.8MM				
36	S8-KT1-640-000		SPR, P-UP DFP				
37	S8-KT1-280-000		HOLDER, CD<R92, R72, X72YZ, X72YJ>				
38	S8-KT1-290-000		BASE, GEAR				
39	S8-KT1-300-000		BASE, SPR				
40	S8-KT1-210-000		GEAR, Z11				
41	S8-KT1-220-000		GEAR, Z15				
42	S8-KT1-200-000		GEAR, Z19				
43	S8-KT1-240-000		HOLDER, SPR LEFT				
44	S8-KT1-250-000		HOLDER, SPR RIGHT				
45	S8-KT1-180-000		LOCKER SPR SIDE				
46	S8-KT1-480-000		SPR, DOWN 0.6MM				
47	S8-KT1-490-000		SPR, SHAFT 0.8MM				
48	S8-KT1-270-000		LENS, TAPE				
49	S8-KT1-190-000		SHAFT, DFP				
50	S8-KT1-320-000		HOLDER DFP				
51	S1-180-400-010		JACK, ANT				
52	S8-KT1-260-000		PLATE, STOPPER PLATE				
A	87-741-033-410		SCREW, 2-4				
B	87-067-643-010		SCREW, 2-10				
C	87-067-684-010		SCREW, 2.6-6				
D	S0-48K-T10-000		SCREW, SPECIAL M5-4				
E	87-265-544-310		SCREW, 2-2				
F	S0-48K-T10-020		SCREW, SPECIAL M2-2.3-1.8				

NOTE:

Introductory Remarks	Model Name
<R92>	CT-FR928M(YZ)
<R72>	CT-FR728M(YZ)
<R71>	CT-FR718(YZ)
<X71YZ>	CT-FX718(YZ)
<X71YV>	CT-FX718(YVJ)
<X72YZ>	CT-FX728M(YZ)
<X72YJ>	CT-FX728M(YJ)

TAPE MECHANISM EXPLODED VIEW 1/1



TAPE MECHANISM PARTS LIST 1/1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	KANRI NO.	DESCRIPTION	REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S1-052-260-010		CHASSIS ASSY	70	S1-052-270-110		SW, LEAF (MLS-4)
2	S1-052-260-020		HADE PLATE ASSY	71	S1-052-270-100		SW, LEAF (MSL-2)
3	S1-052-260-030		SUB CHASSIS ASSY	A	S1-052-250-030		SCREW, AZIMUTH
4	SX-052-210-040		HOLDER ARM ASSY	B	S1-005-250-230		SCREW, MOTOR M2-2.5
5	SX-052-210-060		T.U ARM(F) ASSY	C	S1-010-150-060		SCREW, PLAIN M1.7-7
6	SX-052-210-070		T.U ARM(R) ASSY	D	S1-052-250-050		SCREW, SPECIAL (2)
7	SX-052-210-100		SET ARM ASSY	E	S2-103-200-22C		SCREW, PLAIN M2-2.2
8	SX-052-210-190		PINCH ARM(F) ASSY	F	S1-052-250-060		SCREW, SPECIAL (3)
9	SX-052-210-200		PINCH ARM(R) ASSY	G	S2-133-200-30C		SCREW, PLAIN M2-3
10	SX-052-210-220		F.R ARM ASSY	H	S2-138-200-50C		PLAIN B-TYPE M2-5
11	SX-052-220-080		DETECT ARM ASSY	I	S1-001-250-170		WASHER MYLAR
12	SX-052-220-100		LOAD GEAR ASSY	J	S2-181-200-30D		PSW-S 1.2-3.0-0.25
13	SX-052-220-160		FLYWHEEL (F) ASSY	K	S2-181-600-32D		PSW-S 1.6-3.2-0.25
14	SX-052-220-180		REEL TABLE ASSY	L	S2-181-600-32S		PSW-S 1.6-3.2-0.5
15	SX-052-220-200		REDUCTION GEAR ARM ASSY	M	S2-182-100-32D		PSW, 2.1-3.2-0.25
16	SX-052-220-210		FLYWHEEL (R) ASSY	N	S2-182-100-40D		PSW, 2.1-4.0-0.25
17	SX-005-220-010		FR GEAR ASSY	O	S1-005-350-050		LMW-S, 1.5-3.2-0.25
18	S1-052-210-080		PLATE, DIR	P	S2-182-100-403		PSW, 2.1-4.0-0.3
19	S1-052-210-090		PLATE FF/REW	Q	S2-171-150-401		E-RING, 1.5
20	S1-052-210-120		MOTOR BKT	R	S2-171-160-329		E-RING 1.6-3.2-0.3
21	S1-052-210-130		LOAD ARM				
22	S1-052-210-140		SHIFT CAM LINK				
23	S1-052-210-170		HOLDER CASS				
24	S0-052-210-260		HOLDER WORM				
25	S1-052-220-010		GUIDE TAPE				
26	S1-052-220-020		HEAD BKT				
27	S1-052-220-030		CAM SHIFT HEAD				
28	S1-052-220-040		GEAR SELECT				
29	S1-052-220-050		GEAR REDUCTION				
30	S1-052-220-060		GEAR DETECT				
31	S1-052-220-070		DETECTOR				
32	S1-005-220-120		GEAR WORM				
33	S1-052-220-110		GEAR MODE				
34	S1-052-220-120		GEAR MODE (2)				
35	S1-052-220-130		GEAR LATCH				
36	S1-052-220-140		GEAR IDLE (1)				
37	S0-052-220-150		GEAR IDLE (2)				
38	S1-052-220-170		GEAR T.U				
39	S1-052-220-190		RACHET				
40	S1-052-220-220		SW, ACTUATER				
41	S1-005-670-110		SW, SW-112				
42	S1-005-220-040		RELL DRIVER				
43	S1-005-220-060		IDLE PULLEY				
44	S1-005-220-100		WORM				
45	S1-005-220-320		CATCH (K)				
46	S1-052-230-050		SELECT GEAR COLLAR				
47	S1-005-230-280		HEAD BASE ROLLER (L)				
48	S1-005-230-290		HEAD BASE ROLLER (S)				
49	S1-005-230-380		MOTOR PULLEY (DL)				
50	S0-052-230-260		WORM COLLAR				
51	S0-052-230-270		MODE GEAR COLLAR				
52	S1-052-240-010		PINCH ARM (F) SPG				
53	S1-052-240-020		PINCH ARM (R) SPG				
54	S1-052-240-030		GEAR LATCH SPG				
55	S1-052-240-040		HEAD SPG				
56	S1-052-240-060		LOAD ARM SPG				
57	S1-052-240-080		CATCH SPG				
58	S1-052-240-100		REEL DRIVER SPG				
59	S1-052-240-110		DASH SPG				
60	S1-052-240-140		HOLDER ARM SPG				
61	S1-052-240-160		HOLD SPG				
62	S1-052-240-170		TU ARM SPG				
63	S1-005-250-220		BELT				
64	S1-003-670-570		MOTOR				
65	S1-052-270-030		HEAD 2CH				
66	S1-052-240-150		FR ARM SPG				
67	S1-003-670-071		SW, SLIDE (SLD-32-710S)				
68	SX-005-270-400		PHOTO COUPLER ASSY				
69	S1-052-270-180		MOTOR, SUB				

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
Gー ー	
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アイワ株式会社
AIWA CO.,LTD.

737004

Tokyo Japan